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Gel electrolyte

Poly(acrylonitrile); Poly(vinyl acetate); PAN-based gel; Lithium ion battery (Amaral, F.A. (164) 379)

Genetic algorithm

Molten carbonate fuel cell; Variable structure control (Yang, F. (164) 713)

H2/air PEM

Fuel cell; Relative humidity; Cathode; Anode; Membrane (Saleh, M.M. (164) 503)

H₂S poisoning

PEMFC; Cyclic voltammetry; Potential steps (Shi, W. (164) 272)

Heat

Solid oxide fuel cell; Thermal energy storage; Residential; Micro-CHP (Hawkes, A.D. (164) 260)

Heat and mass transfer

Air-breathing; PEMFCs; CFD; Oxygen transport limitation (Wang, Y. (164) 721)

Heat treatment

Platinum nanoparticles; Oleylamine; Controlled size; Catalytic activity; Methanol oxidation (Liu, Z. (164) 472)

HEMIN

Reduction; Silicon-based composite; Anode; Lithium ion batteries (Yang, X. (164) 880)

High rate chargeability

Ni–MH battery; Hydride electrode alloy; High rate dischargeability (Shi, S. (164) 911)

High rate dischargeability

Ni-MH battery; Hydride electrode alloy; High rate chargeability (Shi, S. (164) 911)

High temperature PEMFC

PBI/H₃PO₄; Platinum electrocatalyst; Electrochemical surface area; Coalescence mechanism (Zhai, Y. (164) 126)

High-energy mechanical milling

C-SiSn composite; Anode; Li-ion battery (Rock, N.L. (164) 829)

Hybrid model

Proton exchange membrane fuel cell (PEMFC); Pressure-incremental; Particle swarm optimization (PSO); Least square support vector machine (LS-SVM) (Zhong, Z.-D. (164) 746)

Hydride electrode alloy

Ni–MH battery; High rate chargeability; High rate dischargeability (Shi, S. (164) 911)

Hydrogen

Electrolyzer; Fuel cell; Renewable energy (Bergen, A. (164) 624)

Hydrogen

Thermodynamic analysis; Carbon formation boundary; Dimethyl ether; Steam reforming; Fuel cell (Faungnawakij, K. (164) 73)

Hydrogen generation

Lithium alanate; Diethyl ether; Tetrahydrofuran; Specific conductivity; Anodic polarization (Senoh, H. (164) 94)

Hydrogen generation

Sodium borohydride; Supported Co catalyst; Hydrolysis (Ye, W. (164) 544) Hydrogen peroxide

Borohydride ion; Carbon felt; Filter-press cell; FM01-LC cell; Liquid fuel cell (de León, C.P. (164) 441)

Hydrogen production

Catalytic partial oxidation; Steam reforming; Methane; Ni catalyst (Chen, L. (164) 803)

Hydrogen production

Ionic liquid; 1-n-Butyl-3-methylimidazolium tetrafluoroborate (BMI.BF₄); Nickel electrode; 304 stainless steel; Carbon steel electrode (de Souza, R.F. (164) 792)

Hydrogen production

Methane decomposition; Carbon filaments; Zeolites; SBA-15 (Ashok, J. (164) 809)

Hydrogen production

Methanol; Electrolysis; Permeation; Carbon dioxide (Take, T. (164) 9)

Hydrogen production and purification

Bioethanol; PEM fuel-cells (Giunta, P. (164) 336)

Hydrogen storage

Imides; Amides; Ammonia; Ball-milling (Janot, R. (164) 496)

Hydrogen storage

Sodium borohydride; Hydrolysis; Kinetics (Zhang, J.S. (164) 772)

Hydrogen storage

Sodium borohydride; Regeneration; Sodium hydride; Reciprocal system; Molten salts (Calabretta, D.L. (164) 782)

Hydrogen storage materials

V-based alloys; BCC phase; FeV80 master alloy (Yan, Y. (164) 799)

Hydrolysis

Hydrogen generation; Sodium borohydride; Supported Co catalyst (Ye, W. (164) 544)

Hydrolysis

Hydrogen storage; Sodium borohydride; Kinetics (Zhang, J.S. (164) 772) Hydrophilicity

Water management; PEM fuel cell; Air flow channel; Two-phase flow; Pressure drop (Quan, P. (164) 222)

Imides

Hydrogen storage; Amides; Ammonia; Ball-milling (Janot, R. (164) 496) Impedance

Stirred tank reactor fuel cell; Current density distribution; Auto-humidification; Spatially-resolved impedance; Single-channel serpentine design (Hogarth, W.H.J. (164) 464)

Interconnect

Doped ceria; Conductivity; Auto-ignition process; SOFC (Zhou, X. (164) 293)

Interconnect

SOFC; Fe-Cr alloys; Thermal expansion properties; Oxidation resistance properties (Han, M. (164) 278)

Interfacial boundary condition

PEM fuel cell; Mixed-domain model; Fully-coupled transport phenomena; Water content (Meng, H. (164) 688)

Interfacial liquid coverage

Direct methanol fuel cell; Water transport; Mathematical modeling; Threedimension (Liu, W. (164) 189)

Intermediate temperature solid oxide fuel cells

Methane electro-oxidation; Redox-cycles; Ni-Cu catalyst; Ceria electrolytes (Sin, A. (164) 300)

Internal shorting

SOFC; Low temperature; SDC; Fuel loss (Zhang, X. (164) 668)

Ionic conductivity

Kinetics; Cathode materials; Phase transformation; Electronic conductivity (Ma, J. (164) 849)

Ionic liquid

Hydrogen production; 1-*n*-Butyl-3-methylimidazolium tetrafluoroborate (BMI.BF₄); Nickel electrode; 304 stainless steel; Carbon steel electrode (de Souza, R.F. (164) 792)

Irreversible capacity

Natural graphite; Anode; Thermal oxidation; Lithium-ion battery; Cycleability (Shim, J. (164) 862)

Kerosene

Dodecane; Tetralin; Ceria; Zirconia; Autothermal (Gould, B.D. (164) 344) Kinetics

Cathode materials; Phase transformation; Ionic conductivity; Electronic conductivity (Ma, J. (164) 849)

Kinetics

Hydrogen storage; Sodium borohydride; Hydrolysis (Zhang, J.S. (164) 772)

Kinetics

Lithium-ion battery; LiMn₂O₄; Precursor (Zhao, M.S. (164) 822)

 $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{0.2}\text{Fe}_{0.8}\text{O}_{3-\delta}$

Solid oxide fuel cells; Cathode-supported SOFC; Gadolinium-doped ceria oxide; Co-firing (Liu, Y. (164) 56)

Lattice Boltzmann method

SOFC; Concentration polarization; Anode microstructure; Multi-component diffusion; Porous media (Joshi, A.S. (164) 631)

Lead-acid battery

Pb-Ca-Sn-Li alloy; Lithium; Anodic Pb²⁺ film; Electrochemical impedance spectroscopy (EIS) (Shervedani, R.K. (164) 890)

Leakage current

Batch-type metallothermic reduction; Dielectric dissipation; Solid-electrolyte capacitor; External continuous supply; Tantalum powder (Yoon, J.S. (164) 959)

Least square support vector machine (LS-SVM)

Proton exchange membrane fuel cell (PEMFC); Pressure-incremental; Hybrid model; Particle swarm optimization (PSO) (Zhong, Z.-D. (164) 746)

 $Li_{1+x}V_3O_8$

Secondary Li batteries; Cathode materials; Freeze drying; Particle morphology (Brylev, O.A. (164) 868)

Li₄Ti₅O₁₂

Electrospinning; Three-dimensional rechargeable lithium ion batteries; Nanofibers; TiO₂ (Lu, H.-W. (164) 874)

Lifetime criterion

Porous ceramic; Sintering behavior; α-Lithium aluminate (α-LiAlO₂) matrix; Pore structure (Zhou, L. (164) 24)

Li-ion batteries

Anode materials; Nanomaterials; Amorphous Co₃Sn₂ (Xie, J. (164) 386) Li-ion battery

High-energy mechanical milling; C-SiSn composite; Anode (Rock, N.L. (164) 829)

Li-ion battery

LiMn₂O₄; Cyclic voltammetry; Spinel cathode; Discharge capacity (Singhal, R. (164) 857)

LiMn₂O₄

Li-ion battery; Cyclic voltammetry; Spinel cathode; Discharge capacity (Singhal, R. (164) 857)

LiMn₂O₄

Lithium-ion batteries; γ-MnOOH; Spinel-type; Discharge rate; Capacity retention (Bao, S.-J. (164) 885)

LiMn₂O₄

Lithium-ion battery; Precursor; Kinetics (Zhao, M.S. (164) 822)

Liquid electrification

Nanoporous; Mechanical-to-electric energy conversion; Monel (Qiao, Y. (164) 931)

Liquid electrolyte absorbency

Quasi-solid-state dye-sensitized solar cell; Absorbent; PAA–PEG hybrid; Polymer gel electrolyte; Energy conversion efficiency (Lan, Z. (164) 921)

Liquid feed fuel cell

Fuel sensor-less control; Direct methanol fuel cell (Chang, C.L. (164) 606) Liquid fuel cell

Borohydride ion; Carbon felt; Filter-press cell; FM01-LC cell; Hydrogen peroxide (de León, C.P. (164) 441)

Lithium

Pb-Ca-Sn-Li alloy; Lead-acid battery; Anodic Pb²⁺ film; Electrochemical impedance spectroscopy (EIS) (Shervedani, R.K. (164) 890)

Lithium alanate

Diethyl ether; Tetrahydrofuran; Specific conductivity; Anodic polarization; Hydrogen generation (Senoh, H. (164) 94)

α-Lithium aluminate (α-LiAlO₂) matrix

Porous ceramic; Sintering behavior; Lifetime criterion; Pore structure (Zhou, L. (164) 24)

Lithium ion batteries

HEMM; Reduction; Silicon-based composite; Anode (Yang, X. (164) 880) Lithium ion battery

Gel electrolyte; Poly(acrylonitrile); Poly(vinyl acetate); PAN-based gel (Amaral, F.A. (164) 379)

Lithium polymer battery

Polymerizable ionic liquids; Ultra high molecular weight polymer; Gel; Rate performance (Sato, T. (164) 390)

Lithium/air cell

Transient model; Organic electrolyte; Diffusion-limited (Sandhu, S.S. (164) 365)

Lithium-ion batteries

γ-MnOOH; LiMn₂O₄; Spinel-type; Discharge rate; Capacity retention (Bao, S.-J. (164) 885)

Lithium-ion battery

LiMn₂O₄; Precursor; Kinetics (Zhao, M.S. (164) 822)

Lithium-ion battery

Natural graphite; Anode; Thermal oxidation; Cycleability; Irreversible capacity (Shim, J. (164) 862)

Lithium-ion battery

Transmission electron microscopy; Chromium oxide; Conversion reaction; Stainless steel (Dupont, L. (164) 839)

Long-term testing

Solid oxide fuel cell stacks; Sulfur tolerant anode; Coal syngas; Experimental performance (Marquez, A.I. (164) 659)

Low temperature

SOFC; SDC; Internal shorting; Fuel loss (Zhang, X. (164) 668)

Low temperature

SOFC; SDC; ScSZ; Bi-layer electrolyte; Pulsed laser deposition (Yang, D. (164) 182)

Lyotropic liquid crystalline

Manganese dioxide; Supercapacitors; Electrodeposition (Xue, T. (164) 953)

Manganese

Recycling; Zn-MnO₂ batteries (Freitas, M.B.J.G. (164) 947)

Manganese dioxide

Supercapacitors; Lyotropic liquid crystalline; Electrodeposition (Xue, T. (164) 953)

Mathematical modeling

Direct methanol fuel cell; Water transport; Three-dimension; Interfacial liquid coverage (Liu, W. (164) 189)

Mechanical texturing

Contact resistance; PEM fuel cells; Bipolar plates (Kraytsberg, A. (164) 697) Mechanical-to-electric energy conversion

Nanoporous; Liquid electrification; Monel (Qiao, Y. (164) 931)

Membrane

Cross-linking; Proton conductivity; Sulfonation (Ding, F.C. (164) 488)

Membrane

H₂/air PEM; Fuel cell; Relative humidity; Cathode; Anode (Saleh, M.M. (164) 503)

Membrane electrode assembly

Proton conducting membrane; Semi-interpenetrating network; Poly(vinyl alcohol); Poly(styrene sulfonic acid-co-maleic acid); Fuel cells (Lin, C.W. (164) 449)

MEMS

Microreactor; Microchemical systems; PID control; Steam reforming; Fuel cell (Shin, W.C. (164) 328)

MEMS

PEMFC; Micro-valve; Fuel cell energy management; Flow imbalance (Hensel, J.P. (164) 115)

Methane

Hydrogen production; Catalytic partial oxidation; Steam reforming; Ni catalyst (Chen, L. (164) 803)

Methane decomposition

Carbon filaments; Zeolites; SBA-15; Hydrogen production (Ashok, J. (164) 809)

Methane electro-oxidation

Intermediate temperature solid oxide fuel cells; Redox-cycles; Ni–Cu catalyst; Ceria electrolytes (Sin, A. (164) 300)

Methanol

CO; Catalytic activity; Platinum nanoparticles (Teng, Z.-H. (164) 105)

Methano

Hydrogen production; Electrolysis; Permeation; Carbon dioxide (Take, T. (164) 9)

Methanol

Nanostructure; Composite; Poly(*N*-acetylaniline); Catalytic oxidation (Jiang, C. (164) 49)

Methanol

Solid oxide fuel cells; Ceria; Deactivation (Kim, T. (164) 42)

Methanol crossover

DMFC; Carbon dioxide sensor (Han, J. (164) 166)

Methanol crossover

DMFC; Fuel stack; Power characteristics; Water transfer (Liu, Y. (164) 322) Methanol electro-oxidation

Direct methanol fuel cell (DMFC); Pt-CeO₂/CNTs (Wang, J. (164) 555)

Methanol oxidation

Platinum nanoparticles; Oleylamine; Controlled size; Heat treatment; Catalytic activity (Liu, Z. (164) 472)

Methanol oxidation

Polyaniline; Poly(styrene sulfonic acid); Pt particles; AES (Huang, L.-M. (164) 519)

Micro direct methanol fuel cell

Current-collector; Fuel delivery; Contact resistance; Exposure ratio (Yang, W.M. (164) 549)

Micro fuel cell

Micropower; Portable power generation; Fuel cell system; Pareto optimal; Design metrics (Mitsos, A. (164) 678)

Microchemical systems

MEMS; Microreactor; PID control; Steam reforming; Fuel cell (Shin, W.C. (164) 328)

Micro-CHP

Solid oxide fuel cell; Thermal energy storage; Heat; Residential (Hawkes, A.D. (164) 260)

Microporous membrane

Separator; Polyolefin; Non-woven; Thermal shutdown; Safety (Zhang, S.S. (164) 351)

Micropower

Portable power generation; Fuel cell system; Micro fuel cell; Pareto optimal; Design metrics (Mitsos, A. (164) 678)

Microreactor

MEMS; Microchemical systems; PID control; Steam reforming; Fuel cell (Shin, W.C. (164) 328)

Microturbine

Distributed generation; Dynamic model; Proton exchange membrane fuel cell; Simulation (El-Sharkh, M.Y. (164) 315)

Micro-valve

PEMFC; MEMS; Fuel cell energy management; Flow imbalance (Hensel, J.P. (164) 115)

Mixed-domain model

PEM fuel cell; Interfacial boundary condition; Fully-coupled transport phenomena; Water content (Meng, H. (164) 688)

γ-MnOOF

Lithium-ion batteries; LiMn₂O₄; Spinel-type; Discharge rate; Capacity retention (Bao, S.-J. (164) 885)

Model

Air breathing; Planar cathode; Performance characteristics; Parametric study (Rajani, B.P.M. (164) 210)

Model

Two-phase transport; Porous electrode (Hwang, J.J. (164) 174)

3D model

Planar SOFC; Thermal stress; Multiple-cell stack; Finite element analysis (Lin, C.-K. (164) 238)

Modeling

Direct methanol fuel cell; Electron transport; Three dimensions (Liu, W. (164) 561)

Modeling

SOFC; Segmented-in-series; Optimization; Cathode (Lai, T.S. (164) 742)

Modeling

Solid oxide fuel cell; Anode-supported; Surface diffusion (Shi, Y. (164) 639)

Molten carbonate fuel cell

Variable structure control; Genetic algorithm (Yang, F. (164) 713)

Molten salts

Sodium borohydride; Regeneration; Hydrogen storage; Sodium hydride; Reciprocal system (Calabretta, D.L. (164) 782)

Molten salts

Thermal batteries; Electrolyte (Masset, P. (164) 397)

Monel

Nanoporous; Mechanical-to-electric energy conversion; Liquid electrification (Qiao, Y. (164) 931)

Multi-component diffusion

Lattice Boltzmann method; SOFC; Concentration polarization; Anode microstructure; Porous media (Joshi, A.S. (164) 631)

Multilayer

Fuel cell; Composite membrane; Sulfonated polyimide; Nafion (Wang, L. (164) 80)

Multiple-cell stack

Planar SOFC; Thermal stress; Finite element analysis; 3D model (Lin, C.-K. (164) 238)

Nafion

Fuel cell; Composite membrane; Sulfonated polyimide; Multilayer (Wang, L. (164) 80)

Nafion loading

PEMFC; Parametric study; Prediction; Experiment (Cheng, C.-H. (164) 730)

Nano-crystalline LiMn₂O₄ thin film

Pulsed laser deposition; Capacity; Charge/discharge; Stability (Tang, S.B. (164) 372)

Nanofibers

Electrospinning; Three-dimensional rechargeable lithium ion batteries; TiO₂; Li₄Ti₄O₁₂ (Lu, H.-W. (164) 874)

Nanomaterials

Li-ion batteries; Anode materials; Amorphous Co_3Sn_2 (Xie, J. (164) 386) Nanoporous

Mechanical-to-electric energy conversion; Liquid electrification; Monel (Qiao, Y. (164) 931)

Nanostructure

Composite; Poly(*N*-acetylaniline); Methanol; Catalytic oxidation (Jiang, C. (164) 49)

Natural graphite

Anode; Thermal oxidation; Lithium-ion battery; Cycleability; Irreversible capacity (Shim, J. (164) 862)

Net water transport coefficient

Current distribution; Water distribution; Water management; Fuel cell diagnostics (Lu, G.Q. (164) 134)

Ni catalyst

Hydrogen production; Catalytic partial oxidation; Steam reforming; Methane (Chen, L. (164) 803)

Nickel electrode

Ionic liquid; Hydrogen production; 1-n-Butyl-3-methylimidazolium tetrafluoroborate (BMI.BF₄); 304 stainless steel; Carbon steel electrode (de Souza, R.F. (164) 792)

Nickel hydroxide/AC

Electrochemical capacitor; Composite electrode; Specific capacitance (Huang, Q. (164) 425)

Nickel oxide

SOFC; Thermodynamic analysis; Durability; CO₂-sequestring (Nehter, P. (164) 252)

Ni-Cu catalyst

Intermediate temperature solid oxide fuel cells; Methane electro-oxidation; Redox-cycles; Ceria electrolytes (Sin, A. (164) 300)

Ni-MH battery

Hydride electrode alloy; High rate chargeability; High rate dischargeability (Shi, S. (164) 911)

Non-noble catalysts

PEMFCs; Tungsten nitride; Oxygen reduction reaction (Zhong, H. (164) 572)

Non-woven

Separator; Microporous membrane; Polyolefin; Thermal shutdown; Safety (Zhang, S.S. (164) 351)

Numerical

Serpentine microchannel; Electroosmotic flow; Three-dimensional; Zeta potential (Saha, A.A. (164) 154)

Ohmic loss

PEMFC stack; Voltage degradation model; Concentration resistance coefficient; Activation loss (Lu, L. (164) 306)

Olevlamine

Platinum nanoparticles; Controlled size; Heat treatment; Catalytic activity; Methanol oxidation (Liu, Z. (164) 472)

Optimization

SOFC; Segmented-in-series; Cathode; Modeling (Lai, T.S. (164) 742) Organic electrolyte

Lithium/air cell; Transient model; Diffusion-limited (Sandhu, S.S. (164) 365)

Oxidation

Catalyst support; Tungsten carbide; Carbon; Proton exchange membrane fuel cells (Chhina, H. (164) 431)

Oxidation resistance properties

SOFC; Interconnect; Fe–Cr alloys; Thermal expansion properties (Han, M. (164) 278)

Oxide

Ethanol; Fuel cells; Palladium; Electrooxidation (Xu, C. (164) 527)

Oxygen reduction reaction

PEMFC; DMFC; Porous carbon (Yamada, H. (164) 538)

Oxygen reduction reaction

PEMFCs; Tungsten nitride; Non-noble catalysts (Zhong, H. (164) 572)

Oxygen transport limitation

Air-breathing; PEMFCs; CFD; Heat and mass transfer (Wang, Y. (164) 721)

PAA-PEG hybrid

Quasi-solid-state dye-sensitized solar cell; Absorbent; Polymer gel electrolyte; Liquid electrolyte absorbency; Energy conversion efficiency (Lan, Z. (164) 921)

Palladium

Ethanol; Fuel cells; Oxide; Electrooxidation (Xu, C. (164) 527)

PAN-based gel

Gel electrolyte; Poly(acrylonitrile); Poly(vinyl acetate); Lithium ion battery (Amaral, F.A. (164) 379)

Parametric study

Air breathing; Planar cathode; Model; Performance characteristics (Rajani, B.P.M. (164) 210)

Parametric study

Nation loading; PEMFC; Prediction; Experiment (Cheng, C.-H. (164) 730)

Micropower; Portable power generation; Fuel cell system; Micro fuel cell; Design metrics (Mitsos, A. (164) 678)

Particle morphology

Secondary Li batteries; Cathode materials; Li_{1+x}V₃O₈; Freeze drying (Bryley, O.A. (164) 868)

Particle swarm optimization (PSO)

Proton exchange membrane fuel cell (PEMFC); Pressure-incremental; Hybrid model; Least square support vector machine (LS-SVM) (Zhong, Z.-D. (164) 746)

Passive

DMFC; Planar; Air breathing; Design; Performance (Martin, J.J. (164) 287)

Pb-Ca-Sn-Li alloy

Lead-acid battery; Lithium; Anodic Pb²⁺ film; Electrochemical impedance spectroscopy (EIS) (Shervedani, R.K. (164) 890)

PBI/H₃PO₄

High temperature PEMFC; Platinum electrocatalyst; Electrochemical surface area; Coalescence mechanism (Zhai, Y. (164) 126)

 PbO_2

Chemical forming; Bipolar lead-acid battery; Conductive polyethylene; Curing; Discharge capacity; Power density (Karami, H. (164) 896)

PEM fuel cell

Mixed-domain model; Interfacial boundary condition; Fully-coupled transport phenomena; Water content (Meng, H. (164) 688)

PEM fuel cell

System identification; Adaptive control (Yang, Y.-P. (164) 761)

PEM fuel cell

Water management; Air flow channel; Two-phase flow; Hydrophilicity; Pressure drop (Quan, P. (164) 222)

PEM fuel cells

Contact resistance; Bipolar plates; Mechanical texturing (Kraytsberg, A. (164) 697)

PEM fuel-cells

Hydrogen production and purification; Bioethanol (Giunta, P. (164) 336) PEMFC

DC/DC PWM converter; Air, coolant and power flow control (Choe, S.-Y. (164) 614)

PEMFC

DMFC; Porous carbon; Oxygen reduction reaction (Yamada, H. (164) 538)

 $\rm H_2S$ poisoning; Cyclic voltammetry; Potential steps (Shi, W. (164) 272) PEMFC

MEMS; Micro-valve; Fuel cell energy management; Flow imbalance (Hensel, J.P. (164) 115)

PEMFC

Nafion loading; Parametric study; Prediction; Experiment (Cheng, C.-H. (164) 730)

PEMEC

Water management; Anode water removal; Water dynamics (Karnik, A.Y. (164) 590)

PEMFC

Water management layer; Rolling method (Shi, J. (164) 284)

PEMFC

Water transport; Five-layer model (Chen, F. (164) 649)

PEMFC stack

Voltage degradation model; Concentration resistance coefficient; Ohmic loss; Activation loss (Lu, L. (164) 306)

PEMFCs

Air-breathing; CFD; Heat and mass transfer; Oxygen transport limitation (Wang, Y. (164) 721)

PEMFCs

Tungsten nitride; Oxygen reduction reaction; Non-noble catalysts (Zhong, H. (164) 572)

Performance

DMFC; Passive; Planar; Air breathing; Design (Martin, J.J. (164) 287)

Performance characteristics

Air breathing; Planar cathode; Model; Parametric study (Rajani, B.P.M. (164) 210)

Permeation

Hydrogen production; Methanol; Electrolysis; Carbon dioxide (Take, T. (164) 9)

Phase transformation

Kinetics; Cathode materials; Ionic conductivity; Electronic conductivity (Ma, J. (164) 849)

Photogalvanic cell

Thionine; Azur-B; Fill factor; Conversion efficiency; Power point (Lal, C. (164) 926)

PID control

MEMS; Microreactor; Microchemical systems; Steam reforming; Fuel cell (Shin, W.C. (164) 328)

Planar

DMFC; Passive; Air breathing; Design; Performance (Martin, J.J. (164) 287)

Planar cathode

Air breathing; Model; Performance characteristics; Parametric study (Rajani, B.P.M. (164) 210)

Planar SOFC

Thermal stress; Multiple-cell stack; Finite element analysis; 3D model (Lin, C.-K. (164) 238)

Platinum

Direct borohydride fuel cell; Fuel crossover; Cathode; Silver (Liu, B.H. (164) 100)

Platinum electrocatalyst

High temperature PEMFC; PBI/H₃PO₄; Electrochemical surface area; Coalescence mechanism (Zhai, Y. (164) 126)

Platinum nanoparticles

Methanol; CO; Catalytic activity (Teng, Z.-H. (164) 105)

Platinum nanoparticles

Oleylamine; Controlled size; Heat treatment; Catalytic activity; Methanol oxidation (Liu, Z. (164) 472)

Poisoning

Protective coatings; Chromium vaporization; Degradation (Stanislowski, M. (164) 578)

Poly(acrylonitrile)

Gel electrolyte; Poly(vinyl acetate); PAN-based gel; Lithium ion battery (Amaral, F.A. (164) 379)

Polyaniline

Poly(styrene sulfonic acid); Pt particles; AES; Methanol oxidation (Huang, L.-M. (164) 519)

Poly(benzimidazole)

PTFE; Composite membranes; Fuel cell (Lin, H.-L. (164) 481)

Polymer blend

FTIR; XRD; SEM; Thermal and conductivity studies (Rajendran, S. (164) 815)

Polymer electrolyte fuel cell

Electrochemical oxidation; Cyclic voltammetry; Alcohol; Electrocatalyst (Fujiwara, N. (164) 457)

Polymer gel electrolyte

Quasi-solid-state dye-sensitized solar cell; Absorbent; PAA–PEG hybrid; Liquid electrolyte absorbency; Energy conversion efficiency (Lan, Z. (164) 921)

Polymerizable ionic liquids

Lithium polymer battery; Ultra high molecular weight polymer; Gel; Rate performance (Sato, T. (164) 390)

Poly(N-acetylaniline)

Nanostructure; Composite; Methanol; Catalytic oxidation (Jiang, C. (164) 49)

Polyolefin

Separator; Microporous membrane; Non-woven; Thermal shutdown; Safety (Zhang, S.S. (164) 351)

Polypyrrole

Ammonium borodisalicylate; Electropolymerization; Aluminum solid-state capacitor (Toita, S. (164) 905)

Poly(styrene sulfonic acid)

Polyaniline; Pt particles; AES; Methanol oxidation (Huang, L.-M. (164) 510)

Poly(styrene sulfonic acid-co-maleic acid)

Proton conducting membrane; Semi-interpenetrating network; Poly(vinyl alcohol); Membrane electrode assembly; Fuel cells (Lin, C.W. (164) 449)

Poly(vinyl acetate)

Gel electrolyte; Poly(acrylonitrile); PAN-based gel; Lithium ion battery (Amaral, F.A. (164) 379)

Poly(vinyl alcohol)

Proton conducting membrane; Semi-interpenetrating network; Poly(styrene sulfonic acid-co-maleic acid); Membrane electrode assembly; Fuel cells (Lin, C.W. (164) 449)

Pore structure

Porous ceramic; Sintering behavior; Lifetime criterion; α-Lithium aluminate (α-LiAlO₂) matrix (Zhou, L. (164) 24)

Porous carbon

PEMFC; DMFC; Oxygen reduction reaction (Yamada, H. (164) 538)

Porous ceramic

Sintering behavior; Lifetime criterion; α -Lithium aluminate (α -LiAlO₂) matrix; Pore structure (Zhou, L. (164) 24)

Porous electrode

Two-phase transport; Model (Hwang, J.J. (164) 174)

Porous media

Lattice Boltzmann method; SOFC; Concentration polarization; Anode microstructure; Multi-component diffusion (Joshi, A.S. (164) 631)

Portable power generation

Micropower; Fuel cell system; Micro fuel cell; Pareto optimal; Design metrics (Mitsos, A. (164) 678)

Potential steps

PEMFC; H₂S poisoning; Cyclic voltammetry (Shi, W. (164) 272)

Power characteristics

DMFC; Fuel stack; Methanol crossover; Water transfer (Liu, Y. (164) 322) Power density

Chemical forming; PbO₂; Bipolar lead–acid battery; Conductive polyethylene; Curing; Discharge capacity (Karami, H. (164) 896)

Power point

Photogalvanic cell; Thionine; Azur-B; Fill factor; Conversion efficiency (Lal, C. (164) 926)

Precursor

Lithium-ion battery; LiMn₂O₄; Kinetics (Zhao, M.S. (164) 822)

Prediction

Nafion loading; PEMFC; Parametric study; Experiment (Cheng, C.-H. (164) 730)

Pressure drop

Water management; PEM fuel cell; Air flow channel; Two-phase flow; Hydrophilicity (Quan, P. (164) 222)

Pressure-incremental

Proton exchange membrane fuel cell (PEMFC); Hybrid model; Particle swarm optimization (PSO); Least square support vector machine (LS-SVM) (Zhong, Z.-D. (164) 746)

Protective coatings

Chromium vaporization; Poisoning; Degradation (Stanislowski, M. (164) 578) Proton conducting membrane

Semi-interpenetrating network; Poly(vinyl alcohol); Poly(styrene sulfonic acid-co-maleic acid); Membrane electrode assembly; Fuel cells (Lin, C.W. (164) 449)

Proton conductivity

Cross-linking; Sulfonation; Membrane (Ding, F.C. (164) 488)

Proton exchange membrane

Crosslinking; Sulfonated poly(ether ether ketone)s; UV irradiation; Direct methanol fuel cell (Zhong, S. (164) 65)

Proton exchange membrane

Electrochemical hydrogen pump; Separation and compression of hydrogen; Concentration cell (Onda, K. (164) 1)

Proton exchange membrane

Fuel-cell; Robust control; System identification (Wang, F.-C. (164) 704)

Proton exchange membrane fuel cell

Distributed generation; Dynamic model; Microturbine; Simulation (El-Sharkh, M.Y. (164) 315)

Proton exchange membrane fuel cell (PEMFC)

Pressure-incremental; Hybrid model; Particle swarm optimization (PSO); Least square support vector machine (LS-SVM) (Zhong, Z.-D. (164) 746)

Proton exchange membrane fuel cells

Catalyst support; Oxidation; Tungsten carbide; Carbon (Chhina, H. (164) 431) Proton exchange membrane fuel cells

Residence time distribution; Water management; Flow field obstruction; Gas diffusion electrode liquid water content (St-Pierre, J. (164) 196)

Pt particles

Polyaniline; Poly(styrene sulfonic acid); AES; Methanol oxidation (Huang, L.-M. (164) 519)

Pt-CeO₂/CNTs

Direct methanol fuel cell (DMFC); Methanol electro-oxidation (Wang, J. (164) 555)

Pt-Co/C

Ethanol; Fuel cell; Cathode; Electrocatalysts (Lopes, T. (164) 111)

PTFF

Poly(benzimidazole); Composite membranes; Fuel cell (Lin, H.-L. (164) 481) Pulsed laser deposition

Nano-crystalline ${\rm LiMn_2O_4}$ thin film; Capacity; Charge/discharge; Stability (Tang, S.B. (164) 372)

Pulsed laser deposition

SOFC; Low temperature; SDC; ScSZ; Bi-layer electrolyte (Yang, D. (164) 182)

Quasi-solid-state dye-sensitized solar cell

Absorbent; PAA–PEG hybrid; Polymer gel electrolyte; Liquid electrolyte absorbency; Energy conversion efficiency (Lan, Z. (164) 921)

Rate performance

Lithium polymer battery; Polymerizable ionic liquids; Ultra high molecular weight polymer; Gel (Sato, T. (164) 390)

Reciprocal system

Sodium borohydride; Regeneration; Hydrogen storage; Sodium hydride; Molten salts (Calabretta, D.L. (164) 782)

Recuperative heat exchanger

Solid oxide fuel cell; Cycle analysis; Exhaust gas recirculation (Zhang, X. (164) 752)

Recycling

Manganese; Zn-MnO₂ batteries (Freitas, M.B.J.G. (164) 947)

Redox-cycles

Intermediate temperature solid oxide fuel cells; Methane electro-oxidation; Ni–Cu catalyst; Ceria electrolytes (Sin, A. (164) 300)

Reduction

HEMM; Silicon-based composite; Anode; Lithium ion batteries (Yang, X. (164) 880)

Regeneration

Sodium borohydride; Hydrogen storage; Sodium hydride; Reciprocal system; Molten salts (Calabretta, D.L. (164) 782)

Relative humidity

H₂/air PEM; Fuel cell; Cathode; Anode; Membrane (Saleh, M.M. (164) 503)

Renewable energy

Electrolyzer; Fuel cell; Hydrogen (Bergen, A. (164) 624)

Residence time distribution

Proton exchange membrane fuel cells; Water management; Flow field obstruction; Gas diffusion electrode liquid water content (St-Pierre, J. (164) 196)

Residential

Solid oxide fuel cell; Thermal energy storage; Heat; Micro-CHP (Hawkes, A.D. (164) 260)

Robust control

Proton exchange membrane; Fuel-cell; System identification (Wang, F.-C. (164) 704)

Rolling method

Water management layer; PEMFC (Shi, J. (164) 284)

Safety

Separator; Microporous membrane; Polyolefin; Non-woven; Thermal shutdown (Zhang, S.S. (164) 351)

SBA-15

Methane decomposition; Carbon filaments; Zeolites; Hydrogen production (Ashok, J. (164) 809)

Scandia stabilized zirconia

Solid oxide fuel cell (SOFC); Direct internal reforming; Composite anode; Ethanol; Carbon deposition (Ye, X.-F. (164) 203)

ScSZ

SOFC; Low temperature; SDC; Bi-layer electrolyte; Pulsed laser deposition (Yang, D. (164) 182)

SDC

SOFC; Low temperature; Internal shorting; Fuel loss (Zhang, X. (164) 668)

SDC

SOFC; Low temperature; ScSZ; Bi-layer electrolyte; Pulsed laser deposition (Yang, D. (164) 182)

Secondary Li batteries

Cathode materials; $\text{Li}_{1+x}\text{V}_3\text{O}_8$; Freeze drying; Particle morphology (Brylev, O.A. (164) 868)

Segmented-in-series

SOFC; Optimization; Cathode; Modeling (Lai, T.S. (164) 742)

SEM

Polymer blend; FTIR; XRD; Thermal and conductivity studies (Rajendran, S. (164) 815)

Semi-interpenetrating network

Proton conducting membrane; Poly(vinyl alcohol); Poly(styrene sulfonic acid-co-maleic acid); Membrane electrode assembly; Fuel cells (Lin, C.W. (164) 449)

Separation and compression of hydrogen

Electrochemical hydrogen pump; Proton exchange membrane; Concentration cell (Onda, K. (164) 1)

Separator

Microporous membrane; Polyolefin; Non-woven; Thermal shutdown; Safety (Zhang, S.S. (164) 351)

Serpentine microchannel

Electroosmotic flow; Numerical; Three-dimensional; Zeta potential (Saha, A.A. (164) 154)

Sheet electrode

EDLC; Electric conducting adhesive; Capacity enhancement (Kim, I.-J. (164) 964)

Silicon-based composite

HEMM; Reduction; Anode; Lithium ion batteries (Yang, X. (164) 880)

Silver

Direct borohydride fuel cell; Fuel crossover; Cathode; Platinum (Liu, B.H. (164) 100)

Simulation

Distributed generation; Dynamic model; Microturbine; Proton exchange membrane fuel cell (El-Sharkh, M.Y. (164) 315)

Single-channel serpentine design

Stirred tank reactor fuel cell; Current density distribution; Impedance; Auto-humidification; Spatially-resolved impedance (Hogarth, W.H.J. (164) 464)

Sintering behavior

Porous ceramic; Lifetime criterion; α-Lithium aluminate (α-LiAlO₂) matrix; Pore structure (Zhou, L. (164) 24)

Slurry spin coating

Solid oxide fuel cells; YSZ electrolyte film; Technique parameters (Wang, J. (164) 17)

Sodium borohydride

Hydrogen generation; Supported Co catalyst; Hydrolysis (Ye, W. (164) 544)

Sodium borohydride

Hydrogen storage; Hydrolysis; Kinetics (Zhang, J.S. (164) 772)

Sodium borohydride

Regeneration; Hydrogen storage; Sodium hydride; Reciprocal system; Molten salts (Calabretta, D.L. (164) 782)

Sodium hydride

Sodium borohydride; Regeneration; Hydrogen storage; Reciprocal system; Molten salts (Calabretta, D.L. (164) 782)

SOFC

Doped ceria; Conductivity; Auto-ignition process; Interconnect (Zhou, X. (164) 293)

SOFC

Interconnect; Fe–Cr alloys; Thermal expansion properties; Oxidation resistance properties (Han, M. (164) 278)

SOFC

Lattice Boltzmann method; Concentration polarization; Anode microstructure; Multi-component diffusion; Porous media (Joshi, A.S. (164) 631)

SOFC

Low temperature; SDC; Internal shorting; Fuel loss (Zhang, X. (164) 668)

SOFC

Low temperature; SDC; ScSZ; Bi-layer electrolyte; Pulsed laser deposition (Yang, D. (164) 182)

SOFC

Segmented-in-series; Optimization; Cathode; Modeling (Lai, T.S. (164) 742)

SOFC

Thermodynamic analysis; Nickel oxide; Durability; CO₂-sequestring (Nehter, P. (164) 252)

SOFCs

Suspension spray; Dense YSZ electrolyte; Transition anode layer (Yan, R. (164) 567)

Solid oxide fuel cell

Anode-supported; Surface diffusion; Modeling (Shi, Y. (164) 639)

Solid oxide fuel cell

Cycle analysis; Recuperative heat exchanger; Exhaust gas recirculation (Zhang, X. (164) 752)

Solid oxide fuel cell

Thermal energy storage; Heat; Residential; Micro-CHP (Hawkes, A.D. (164) 260)

Solid oxide fuel cell (SOFC)

Direct internal reforming; Scandia stabilized zirconia; Composite anode; Ethanol; Carbon deposition (Ye, X.-F. (164) 203)

Solid oxide fuel cell stacks

Sulfur tolerant anode; Coal syngas; Experimental performance; Long-term testing (Marquez, A.I. (164) 659)

Solid oxide fuel cells

Ammonia; YSZ; Dry-pressing; AC impedance (Ma, Q. (164) 86)

Solid oxide fuel cells

Cathode-supported SOFC; $La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-\delta}$; Gadolinium-doped ceria oxide; Co-firing (Liu, Y. (164) 56)

Solid oxide fuel cells

Methanol; Ceria; Deactivation (Kim, T. (164) 42)

Solid oxide fuel cells

Sulfur tolerant anode; Y-doped SrTiO₃; Catalyst infiltration (Kurokawa, H. (164) 510)

Solid oxide fuel cells

YSZ electrolyte film; Slurry spin coating; Technique parameters (Wang, J. (164) 17)

Solid-electrolyte capacitor

Batch-type metallothermic reduction; Leakage current; Dielectric dissipation; External continuous supply; Tantalum powder (Yoon, J.S. (164) 959)

Sonochemistry

Fuel cell; DMFC; Ultrasound enhancement (Han, J. (164) 90)

Spatially-resolved impedance

Stirred tank reactor fuel cell; Current density distribution; Impedance; Auto-humidification; Single-channel serpentine design (Hogarth, W.H.J. (164) 464)

Specific capacitance

Electrochemical capacitor; Composite electrode; Nickel hydroxide/AC (Huang, Q. (164) 425)

Specific conductivity

Lithium alanate; Diethyl ether; Tetrahydrofuran; Anodic polarization; Hydrogen generation (Senoh, H. (164) 94)

Spherical β-Ni(OH)

β-CoOOH coated β-NiOOH; Zn-NiOOH battery; Storage stability; Electrochemical property (Fu, X.-Z. (164) 916)

Spinel cathode

Li-ion battery; LiMn₂O₄; Cyclic voltammetry; Discharge capacity (Singhal, R. (164) 857)

Spinel-type

Lithium-ion batteries; γ-MnOOH; LiMn₂O₄; Discharge rate; Capacity retention (Bao, S.-J. (164) 885)

Stability

Nano-crystalline $LiMn_2O_4$ thin film; Pulsed laser deposition; Capacity; Charge/discharge (Tang, S.B. (164) 372)

Stainless steel

Transmission electron microscopy; Lithium-ion battery; Chromium oxide; Conversion reaction (Dupont, L. (164) 839)

304 stainless steel

Ionic liquid; Hydrogen production; 1-n-Butyl-3-methylimidazolium tetrafluoroborate (BMI.BF₄); Nickel electrode; Carbon steel electrode (de Souza, R.F. (164) 792)

Steam reforming

Hydrogen production; Catalytic partial oxidation; Methane; Ni catalyst (Chen, L. (164) 803)

Steam reforming

MEMS; Microreactor; Microchemical systems; PID control; Fuel cell (Shin, W.C. (164) 328)

Steam reforming

Thermodynamic analysis; Carbon formation boundary; Dimethyl ether; Fuel cell; Hydrogen (Faungnawakij, K. (164) 73)

Stirred tank reactor fuel cell

Current density distribution; Impedance; Auto-humidification; Spatiallyresolved impedance; Single-channel serpentine design (Hogarth, W.H.J. (164) 464)

Storage stability

β-CoOOH coated β-NiOOH; Spherical β-Ni(OH); Zn-NiOOH battery; Electrochemical property (Fu, X.-Z. (164) 916)

Strain

Fuel cell; Gas diffusion layer; Compression; Freezing; Durability (Lee, C. (164) 141)

Sulfonated poly(ether ether ketone)s

Crosslinking; UV irradiation; Proton exchange membrane; Direct methanol fuel cell (Zhong, S. (164) 65)

Sulfonated polyimide

Fuel cell; Composite membrane; Nafion; Multilayer (Wang, L. (164) 80) Sulfonation

Cross-linking; Proton conductivity; Membrane (Ding, F.C. (164) 488) Sulfur tolerant anode

Solid oxide fuel cell stacks; Coal syngas; Experimental performance; Longterm testing (Marquez, A.I. (164) 659)

Sulfur tolerant anode

Solid oxide fuel cells; Y-doped SrTiO₃; Catalyst infiltration (Kurokawa, H. (164) 510)

Supercapacitors

Manganese dioxide; Lyotropic liquid crystalline; Electrodeposition (Xue, T. (164) 953)

Supported Co catalyst

Hydrogen generation; Sodium borohydride; Hydrolysis (Ye, W. (164) 544) Surface diffusion

Solid oxide fuel cell; Anode-supported; Modeling (Shi, Y. (164) 639)

Surfactants

Alkaline Zn/MnO₂ Battery; Zinc passivation; Crystal growth; Electrochemical capacity (Ghavami, R.K. (164) 934)

Suspension spray

SOFCs; Dense YSZ electrolyte; Transition anode layer (Yan, R. (164) 567) System identification

PEM fuel cell; Adaptive control (Yang, Y.-P. (164) 761)

System identification

Proton exchange membrane; Fuel-cell; Robust control (Wang, F.-C. (164) 704)

Tantalum powder

Batch-type metallothermic reduction; Leakage current; Dielectric dissipation; Solid-electrolyte capacitor; External continuous supply (Yoon, J.S. (164) 959)

Technique parameters

Solid oxide fuel cells; YSZ electrolyte film; Slurry spin coating (Wang, J. (164) 17)

Tetrahydrofuran

Lithium alanate; Diethyl ether; Specific conductivity; Anodic polarization; Hydrogen generation (Senoh, H. (164) 94)

Tetralin

Kerosene; Dodecane; Ceria; Zirconia; Autothermal (Gould, B.D. (164) 344)

Thermal and conductivity studies

Polymer blend; FTIR; XRD; SEM (Rajendran, S. (164) 815)

Thermal batteries

Molten salts; Electrolyte (Masset, P. (164) 397)

Thermal energy storage

Solid oxide fuel cell; Heat; Residential; Micro-CHP (Hawkes, A.D. (164) 260)

Thermal expansion properties

SOFC; Interconnect; Fe-Cr alloys; Oxidation resistance properties (Han, M. (164) 278)

Thermal oxidation

Natural graphite; Anode; Lithium-ion battery; Cycleability; Irreversible capacity (Shim, J. (164) 862)

Thermal shutdown

Separator; Microporous membrane; Polyolefin; Non-woven; Safety (Zhang, S.S. (164) 351)

Thermal stress

Planar SOFC; Multiple-cell stack; Finite element analysis; 3D model (Lin, C.-K. (164) 238)

Thermodynamic analysis

Carbon formation boundary; Dimethyl ether; Steam reforming; Fuel cell; Hydrogen (Faungnawakij, K. (164) 73)

Thermodynamic analysis

SOFC; Nickel oxide; Durability; CO₂-sequestring (Nehter, P. (164) 252) Thionine

Photogalvanic cell; Azur-B; Fill factor; Conversion efficiency; Power point (Lal, C. (164) 926)

Three dimensions

Direct methanol fuel cell; Electron transport; Modeling (Liu, W. (164) 561) Three-dimension

Direct methanol fuel cell; Water transport; Mathematical modeling; Interfacial liquid coverage (Liu, W. (164) 189)

Three-dimensional

Serpentine microchannel; Electroosmotic flow; Numerical; Zeta potential (Saha, A.A. (164) 154)

Three-dimensional rechargeable lithium ion batteries

Electrospinning; Nanofibers; TiO_2 ; $Li_4Ti_5O_{12}$ (Lu, H.-W. (164) 874) TiO_2

Electrospinning; Three-dimensional rechargeable lithium ion batteries; Nanofibers; $\text{Li}_4\text{Ti}_5\text{O}_{12}$ (Lu, H.-W. (164) 874)

Transient model

Lithium/air cell; Organic electrolyte; Diffusion-limited (Sandhu, S.S. (164) 365)

Transition anode layer

SOFCs; Suspension spray; Dense YSZ electrolyte (Yan, R. (164) 567)

Transmission electron microscopy

Lithium-ion battery; Chromium oxide; Conversion reaction; Stainless steel (Dupont, L. (164) 839)

Transmission line model

Electric double layer capacitor; Electrochemical impedance spectroscopy; Fractal structure (Itagaki, M. (164) 415)

Tungsten carbide

Catalyst support; Oxidation; Carbon; Proton exchange membrane fuel cells (Chhina, H. (164) 431)

Tungsten nitride

PEMFCs; Oxygen reduction reaction; Non-noble catalysts (Zhong, H. (164) 572)

Two-phase flow

Water management; PEM fuel cell; Air flow channel; Hydrophilicity; Pressure drop (Quan, P. (164) 222)

Two-phase transport

Model; Porous electrode (Hwang, J.J. (164) 174)

Ultra high molecular weight polymer

Lithium polymer battery; Polymerizable ionic liquids; Gel; Rate performance (Sato, T. (164) 390)

Ultrasound enhancement

Fuel cell; DMFC; Sonochemistry (Han, J. (164) 90)

UV irradiation

Crosslinking; Sulfonated poly(ether ether ketone)s; Proton exchange membrane; Direct methanol fuel cell (Zhong, S. (164) 65)

Variable structure control

Molten carbonate fuel cell; Genetic algorithm (Yang, F. (164) 713)

V-based alloys

Hydrogen storage materials; BCC phase; FeV80 master alloy (Yan, Y. (164) 799)

Voltage degradation model

PEMFC stack; Concentration resistance coefficient; Ohmic loss; Activation loss (Lu, L. (164) 306)

Water content

PEM fuel cell; Mixed-domain model; Interfacial boundary condition; Fully-coupled transport phenomena (Meng, H. (164) 688)

Water distribution

Current distribution; Net water transport coefficient; Water management; Fuel cell diagnostics (Lu, G.Q. (164) 134)

Water dynamics

PEMFC; Water management; Anode water removal (Karnik, A.Y. (164) 590) Water management

Current distribution; Water distribution; Net water transport coefficient; Fuel cell diagnostics (Lu, G.Q. (164) 134)

Water management

PEM fuel cell; Air flow channel; Two-phase flow; Hydrophilicity; Pressure drop (Quan, P. (164) 222)

Water management

PEMFC; Anode water removal; Water dynamics (Karnik, A.Y. (164) 590)

Water management

Proton exchange membrane fuel cells; Residence time distribution; Flow field obstruction; Gas diffusion electrode liquid water content (St-Pierre, J. (164) 196)

Water management layer

Rolling method; PEMFC (Shi, J. (164) 284)

Water transfer

DMFC; Fuel stack; Power characteristics; Methanol crossover (Liu, Y. (164) 322)

Water transport

Direct methanol fuel cell; Mathematical modeling; Three-dimension; Interfacial liquid coverage (Liu, W. (164) 189)

Water transport

PEMFC; Five-layer model (Chen, F. (164) 649)

XRD

Polymer blend; FTIR; SEM; Thermal and conductivity studies (Rajendran, S. (164) 815)

Y-doped SrTiO₂

Solid oxide fuel cells; Sulfur tolerant anode; Catalyst infiltration (Kurokawa, H. (164) 510)

YSZ

Solid oxide fuel cells; Ammonia; Dry-pressing; AC impedance (Ma, Q. (164) 86)

YSZ electrolyte film

Solid oxide fuel cells; Slurry spin coating; Technique parameters (Wang, J. (164) 17)

Zeolites

Methane decomposition; Carbon filaments; SBA-15; Hydrogen production (Ashok, J. (164) 809)

Zeta potential

Serpentine microchannel; Electroosmotic flow; Numerical; Three-dimensional (Saha, A.A. (164) 154)

Zinc passivation

Surfactants; Alkaline Zn/MnO₂ Battery; Crystal growth; Electrochemical capacity (Ghavami, R.K. (164) 934)

Zirconia

Kerosene; Dodecane; Tetralin; Ceria; Autothermal (Gould, B.D. (164) 344)

Zn-MnO₂ batteries

Manganese; Recycling (Freitas, M.B.J.G. (164) 947)

Zn-NiOOH battery

 $\beta\text{-CoOOH}$ coated $\beta\text{-NiOOH};$ Spherical $\beta\text{-Ni(OH)};$ Storage stability; Electrochemical property (Fu, X.-Z. (164) 916)